## REMARKS

Favorable reconsideration of this application as presently amended an in light of the following discussion is respectfully requested.

Claims 4-6 and 10-24 are pending in the present application. Claims 1-3 and 7-9 have been canceled, Claim 4 has been amended and Claims 14-24 have been added by the present amendment.

In the outstanding Office Action, Claims 4 and 5 were rejected under 35 U.S.C. § 102(b) as anticipated by Shindo.

Applicants respectfully note that Claims 10-13 were added in a preliminary amendment filed on March 13, 2003, which does not appear to have been considered as the Office Action was mailed on the same day.

Claims 4 and 5 stand rejected under 35 U.S.C. § 102(b) as anticipated by Shindo. This rejection is respectfully traversed.

Amended Claim 4 is directed to a measuring apparatus for measuring an electron energy distribution in a plasma region generated by a high frequency power. The measuring apparatus includes a heating probe having a probe portion which is inserted into the plasma region to be heated by application of a pulse voltage, a pulse power supply which applies heating pulses to the heating probe to heat the probe portion to a state that the probe portion can emit thermions, and a measuring section which detects a difference in floating voltage between a voltage (H level) and a no-voltage (L level) of the pulse voltage. Also included is a calculating section which obtains an electron energy distribution in the plasma region on the basis of the detected value detected by the measuring section. Further, the pulse power supply varies a pulse height (H level) of the pulse when applying the pulse voltage to the heating probe.

In a non-limiting example, Figure 8 illustrates a heating probe 4 having a probe portion which is inserted in the plasma region P to be heated by application of a pulse voltage, a pulse power supply 14 which applies heating pulses to the heating probe 4 to heat the probe portion to a state that the probe 4 can emit thermions, a measuring section 40 which detects a difference in floating voltage between a voltage (H level) and a no-voltage (L level) of the pulse voltage, and a calculating section 24 which obtains an electron energy distribution in the plasma region on the basis of the detected value detected by the measuring section 40. Further, the pulse power supply 14 varies a pulse height (H level) of the pulse when applying the pulse voltage to the heating probe 4 (see page 12, lines 18-22 and page 20, lines 4-10).

Thus, the present invention is directed to a measuring apparatus which measures an electronic energy distribution in a plasma region generated by a high frequency power in which the pulse power supply varies a pulse height of a pulse voltage applied to the heating probe. Thus, an accurate electron energy distribution in high frequency plasma can therefore be obtained (see page 20, lines 4-10).

The outstanding Office Action indicates Shindo teaches the claimed invention. Applicants respectfully first note that Mr. Haruo Shindo is a co-inventor of the present invention. Further, Shindo discloses a technique using a plasma electron temperature measuring method, whereas the present invention as discussed above relates to a technique using electron energy distribution. As noted in the specification at page 2, lines 5-11, the method for measuring the plasma electron temperature is a commonly-used method. Further, as noted in the specification, the temperature measuring method has a problem in that it can only measure the electron temperature corresponding to the average energy and maximal distribution, and the method cannot measure the electron energy distribution (see page 3, lines 23-27).

On the contrary, according to the present invention, when the electron energy distribution is measured, the pulse height (H level) of the pulse voltage VPP is changed to various levels to obtain measurement results as described in the specification at page 12, lines 18-22. Shindo do not teach or suggest these features.

Accordingly, it is respectfully submitted independent Claim 4 and each of the claims depending therefrom are allowable.

In addition, new Claims 14-24 have been added to set forth the invention in a varying scope, and Applicants submit the new claims are supported by the originally filed specification. It is respectfully submitted new Claims 14-17 are also allowable as they depend either directly or indirectly on Claim 4, which as discussed above is believed to be allowable. Further, new Claim 18 is similar to Claim 4, but recites that the measuring apparatus includes a floating capacitance reducing unit which reduces a floating capacitance to the ground (rather than the pulse power supply varying the pulse height). The floating capacitance reducing unit comprises a dummy probe 18 shown in Figure 4 and described in dependent Claim 23 and an optical communication unit 33 shown in Figure 8 and described in dependent Claim 24.

According to the present invention, to determine the electron energy distribution using the heating probe, the floating potential of the heating probe follows the high frequency potential vibration in the plasma (see page 8, lines 19-21). However, as described in the specification at page 14, lines 1-5, "the range of the high frequency vibration in which the floating potential of the heating probe 4 can follow depends on an external circuit, and is determined on the basis of the floating capacitance of the entire circuit to the ground." That is, whether or not the floating potential of the heating probe follows the high frequency potential vibration in the plasma depends on the floating capacitance of the entire circuit of

the heating probe to the ground. Accordingly, the present invention provides a floating capacitance reducing unit which reduces a floating capacitance to ground.

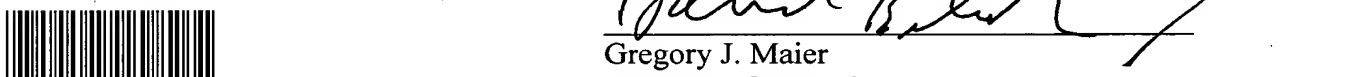
As discussed above, Shindo does not teach or suggest measuring the electronic energy distribution nor the section for calculating the electron energy distribution, and it is respectfully submitted that Shindo also do not teach or suggest the claimed floating capacitance reducing unit.

Accordingly, it is respectfully submitted independent Claim 18 and each of the claims depending therefrom are also allowable.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599
David A. Bilodeau
Registration No. 42,325



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Tel: (703) 413-3000
Fax: (703) 413 -2220

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